Statement for the Record

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The Proposed Fiscal Year 2006 Budget: Enhancing Terrorism Preparedness for First Responders

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Introduction

Good morning Chairman Cox, Congressman Thompson and distinguished members of the subcommittee. I am pleased to appear before you today to discuss the progress the Science and Technology (S&T) Directorate is making in the nation's efforts to improve the emergency preparedness and response capabilities of our nation's first responders.

Our nation relies on a large and diverse responder community. Today's responders face a spectrum of threats of a complexity never before imagined. Helping our responders to be more effective and better protected through innovative, affordable technologies is at the very heart of the mission of the Department of Homeland Security.

I want to acknowledge up front the importance of our partnerships with the Office of State and Local Government Coordination and Preparedness (OSLGCP) and the Federal Emergency Management Agency (FEMA). Bringing these agencies together in one Department has enabled strong collaboration between the agencies, and the S&T Directorate is intimately intertwined with both OSLGCP and FEMA on emergency responder issues. The strategic alliances between our organizations are critical to the successful deployment of new technologies to the local response community. Along with the first responder community and other Federal agencies, these organizations are instrumental in the development of our research requirements through our Science and Technology Requirements Council (SRC). I want to thank both groups publicly for their participation in the SRC and for their cooperation with the S&T Directorate throughout all stages of our research, development, testing and evaluation process.

National Policy for Emergency Response Capability

President Bush has made strengthening the nation's emergency response capability a national priority. Homeland Security Presidential Directive (HSPD)-5, *Management of Domestic Incidents*, resulted in the creation of a National Response Plan (NRP) to integrate Federal prevention, preparedness, response, recovery and mitigation plans into one all-discipline, all-hazard approach to domestic incident management. The NRP, using the National Incident Management System (NIMS), will provide the core organizational structure and operational mechanisms for Federal support to State and local authorities. HSPD-8, *National Preparedness*, established policies to strengthen the preparedness of the United States by requiring a national all-hazards preparedness goal, establishing mechanisms for improved delivery of Federal preparedness assistance to State and local governments, and outlining actions to strengthen preparedness capabilities of Federal, State, and local entities. These two policy documents provide the foundation for the S&T Directorate's Research, Development, Testing & Evaluation (RDT&E) programs to enhance preparedness for first responders and provide the core objectives of the nation's emergency preparedness and response efforts:

> **The National Incident Management System (NIMS)** - This system provides a consistent nationwide approach for Federal, state, and local governments to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. To provide for interoperability and compatibility among Federal, state,

and local capabilities, the NIMS will include a core set of concepts, principles, terminology, and technologies covering the incident command system; multi-agency coordination systems; unified command; training; identification and management of resources (including systems for classifying types of resources); qualifications and certification; and the collection, tracking, and reporting of incident information and incident resources.

The National Preparedness Goal – The national preparedness goal will establish readiness priorities and targets for terrorist attacks, major disasters, and other emergencies. These will lay the foundation for the more detailed readiness metrics and element, including standards for preparedness assessment and strategics, as well as a system for assessing the nation's overall preparedness.

The Science and Technology Directorate's Efforts for Emergency Response Capability

The Department of Homeland Security, through the S&T Directorate, has the mission to ensure that the nation has an enduring capability to address current and emerging threats through scientific achievement. The S&T Directorate engages industry, academia, and our Federal and international government partners in creating and implementing a robust research strategy. In partnership with our DHS counterparts, operational end users, and collaborative research partners, we have already made significant strides in improving our nation's resilience to catastrophic incidents. The nation's first responder community will be a primary beneficiary of this work.

The Science and Technology Directorate has the responsibility to support the achievement of the above objectives by:

- Identifying and developing relevant emergency response technology systems solutions;
- Facilitating the integration of interoperable and compatible "all-hazard" emergency response technology into Federal, state and local emergency response infrastructures;
- Developing and coordinating adoption of national standards to meet homeland security needs; and
- Providing the science and technology leadership and support for the implementation of HSPD-5 and HSPD-8.

The Science and Technology Directorate focuses on the following areas to meet those requirements:

- Emergency Preparedness and Response Technology Development;
- Technology Integration;
- Standards; and
- Interoperability and Compatibility.

Now I will discuss each of these areas in detail, including FY 2004 accomplishments, FY 2005 programs in progress and FY 2006 plans.

Emergency Preparedness and Response (EP&R) Technology Development

Emergency Responder Personal Protective Equipment (PPE): Safety, time, and operational effectiveness are among the most precious commodities to emergency response and homeland security operations professionals. Currently, a variety of protective garments and systems tailored specifically for their individual areas of expertise and occupational environments are in use.

In FY 2004, the S&T Directorate, through its Emergency Preparedness and Response R&D (EP&R) portfolio, began an R&D program to achieve near-term improvements in protection from chemical and biological hazards for firefighter turnout gear, cooling vests and other protective equipment. In addition to our long-term research investments, DHS has developed strong partnerships with other Federal agencies and public and private sector organizations; these partnerships have allowed us to leverage efforts already underway, such as: a prototype 3-D locator that allows incident commanders to track responders and their health, cooling vests, "Smart Cards" to allow rapid identification of on-scene emergency personnel, and the "Heads Up" display that will allow firefighters to identify people and objects through smoke and debris.

In FY 2005, our focus is on the development and application of revolutionary materials and technologies that can be used in multi-hazard environments, are applicable to diverse users, and function as an integral part of a more complex personal protection system. We have issued a Broad Agency Announcement (BAA) to solicit ideas from industry, academia and others on ways to achieve better personal protection systems. Our focus is on the innovative materials that incorporate surface science, nanotechnologies and other advancements to create materials that are lighter-weight, have the ability to withstand the challenges of strenuous activity in unstable and uncertain conditions and provide protection against a multitude of hazards. In addition to actual technology development for PPE, we will also continue our partnership with OSLGCP and other Federal agencies in the development of a Technology Clearinghouse "hub and spoke" concept to enable first responders to access important information on existing and emerging technologies, training, and relevant standards through a single knowledge portal.

In FY 2006, the portfolio will demonstrate several revolutionary and highly innovative materials for emergency personal protective equipment (PPE) applications. We will demonstrate prototype materials and technologies that can that can be made into functional garments or integrated personal protective systems. Solutions will be sought for:

- materials that can be used in diverse applications;
- materials that can provide protection during response to chemical, biological, radiological, nuclear and explosive (CBRNE) events;
- materials that are self-decontaminating against chemical and biological agents, provide localized protection for complex organs susceptible to radiation exposure, and are self-healing upon being compromised (e.g., ripped, torn); and
- materials with increased service life and flame resistance.

In addition to material prototypes, sensors and detectors capable of detecting and alerting responders to CBRNE hazards in real-time will be tested and evaluated as an integral part of the emergency responder ensemble.

Unified Incident Command and Decision Support: Unified Incident Command and Decision Support (UICDS) is the ability to manage personnel, direct equipment, and seamlessly communicate, gather, store, redistribute, and secure any mission critical information needed by incident commanders and emergency responders during an emergency situation. Our research and development program in UICDS uses a systems approach to seek to harness innovative ideas in an effort to create an information management and sharing architecture specifically designed to meet the needs of incident commanders and emergency responders throughout the nation. This program will confront the technical challenges associated with the development of an innovative, modular, scaleable, and secure information management architecture. The resulting UICDS information management system will enable incident commanders to capture and analyze important incident related information, more effectively disseminate mission critical information to emergency responders and provide highly enhanced situational awareness for individual responders and emergency responder teams.

In early FY 2005, the S&T Directorate solicited conceptual designs through a BAA and selected four proposals that offer viable means to incorporate improved capabilities. These selected proposals support an open architecture that is compliant with the NIMS and can be used at all levels of government for emergency response, situational awareness and threat assessment. By the end of FY 2005, the Directorate will evaluate the conceptual designs and down-select to two.

In FY 2006, the S&T Directorate will perform Advanced Technology Demonstrations for these two conceptual designs to further evaluate system performance and interoperability. Future Advanced Concept Demonstration Projects will take advantage of capabilities developed in other Federal agencies and adapt them to operating environments of emergency responders. New systems will accommodate and integrate other technology advances for first responder such as the three-dimensional tracking device mentioned earlier. These systems will assist in creating a holistic picture for the incident commanders. Extensions of this technology development goal include two-way communications, health and biometric monitoring, and visualization.

Simulation Based Training and Education: Advanced simulation and modeling capabilities are key enabling technologies to improve hazards preparedness for emergency responders. Our current emphasis is on the use of simulation-based training for incident management and facilitating efforts to implement HSPD-5 and HSPD-8. The results of this research will provide a more cost effective training and exercise capability for large-scale, multi-jurisdictional incidents and will facilitate the implementation of the NIMS and the National Preparedness Goal. Simulation based systems will place users in realistic environments and in interactive situations and will support all elements of the NIMS.

In FY 2004, the EP&R portfolio identified requirements through interaction with the responder community. We have enlisted the assistance of the Memorial Institute for the Prevention of Terrorism, the National Institute of Justice in the Department of Justice, and the Department of Defense in identifying needs and capability gaps. In collaboration with OSLGCP, FEMA and

other Federal partners, the S&T Directorate has developed a strategy to use advanced technologies to enhance training and exercises that already exist or will be created by OSLGCP and others.

In FY 2005, the S&T Directorate will focus on improving existing simulation capabilities to facilitate planning, execution and evaluation of training and exercise programs at Federal, state and local levels.

In FY 2006, S&T will conduct demonstrations of conceptual designs to better understand functional requirements and operational constraints for large and complex incidents that cross jurisdictions.

Technology Integration

Interagency Modeling and Atmospheric Analysis Center (IMAAC): The IMAAC is a DHS-led capability that provides for a single Federal hazards prediction for airborne release of hazardous material. The IMAAC coordinates Federal atmospheric modeling and provides hazards predictions and consequence assessment support to Federal, state and local responders for incidents of national significance.

In FY 2004, the IMAAC began operation, to support the National Exercise Program and special events, such as the Democratic and Republican National Conventions. The IMAAC established connectivity to the DHS Operations Center and the FEMA National Emergency Operations Center to provide near real time hazards predictions for airborne releases.

In FY 2005, the IMAAC will select a suite of products and implement a process for verification and validation, accreditation of atmospheric transport and dispersion models to be used in support of real world operations. The EP&R portfolio will further refine the IMAAC concept of operations and define scientific research programs necessary to fully support Federal, state and local responders during incidents of national significance. IMAAC will improve its response capability and provide outreach and training to Federal, state and local emergency response organizations through participation in the National Exercise Program.

In FY 2006, the EP&R portfolio will enhance IMAAC capabilities by leveraging Federal resources to provide a venue for collaborative research, development, testing and evaluation of atmospheric transport and dispersion (ATD) models for hazards predictions. IMAAC will host researchers from throughout the nation at its facility and will also participate in virtual collaboration both nationally and internationally. IMAAC researchers will seek to improve ATD modeling systems to routinely quantify uncertainties, improve spatial and temporal scale interactions, and incorporate new measurement technologies to better characterize the urban environment. IMAAC will explore the feasibility of using data from remote sensing platforms and meso-nets into ATD models. The portfolio will initiate research and development in support of other modeling and assessment requirements including other transport mediums, such as water.

The Regional Technology Integration (RTI) Initiative: RTI Initiative, formerly known as "Safe Cities" focuses on making our cities safer and more resilient to attack. Implemented in FY 2004, the RTI initiative is a collaborative effort between the S&T Directorate and the OSLGCP Urban Area Security Initiative (UASI). The RTI demonstration program focuses directly on the needs of the community and uses a "bottoms up" approach to community-based assessment. The program examines the entire system life cycle at an operational level, including system effectiveness, human interface, operations & maintenance, training, and implementation strategies (i.e., regional. vs. local).

In FY 2005, the program will complete its initial assessments in four pilot cities and develop technology system solutions. Also in FY 2005, we will begin the solution phase, which includes deployment of advanced homeland security technologies that can be integrated with existing legacy systems and the support of strategic plans developed for these pilot communities as part of the UASI grants program.

In FY 2006, the EP&R portfolio will complete implementation in the first four pilot locations, prepare test and evaluation plans and conduct operational readiness exercises to evaluate the overall system performance. Technology systems such as atmospheric monitoring, detection systems for chemical and biological toxins, and radiological detection equipment will be integrated with existing emergency response and traffic management infrastructures and the Intelligent Transportation System such that a community can create a virtual emergency operations center. Incorporating these detection systems with modeling and simulation capability for traffic and population as well as atmospheric and water dispersion models will enable local communities to quickly identify terrorist and other major events and respond more effectively. In addition, using the lessons learned from the pilot projects, the EP&R portfolio, in collaboration with FEMA and OSLGCP, will select additional RTI candidate locations. The Assessment Phase for the next RTI cities will begin in FY 2006.

Standards for Emergency Preparedness and Response

The Science and Technology Directorate has a role and responsibility to ensure the effectiveness, efficiency, and interoperability of the tools, technologies, and systems developed for and used by the emergency preparedness and response community. By setting consistent and verifiable measures of effectiveness for basic functionality, minimum performance, interoperability, efficiency, sustainability, and appropriateness and adequacy for the task, standards will improve the quality and usefulness of homeland security systems and technologies. The Science and Technology Directorate's Standards Program strives to enable the first responder community to make informed equipment purchases by linking Federal equipment grants programs to equipment certification and compliance with minimum performance standards.

The primary activities of the Standards Program in the emergency, response, and preparedness arena include the promulgation of standards for chemical, biological, radiological, nuclear, and explosive (CBRNE) detection equipment; for CBRNE personal protective equipment; and for urban search and rescue robots. In addition, the program is focused on supporting ongoing communications standards development for Federal operational activities as well as coordinating and supporting standards development activities related to the implementation of the NIMS.

This program also conducts activities in order to meet the requirement of the SAFETY (Support Anti-Terrorism by Fostering Effective Technologies) Act in developing certification standards for technologies related to homeland security.

Standards for CBRNE Countermeasures: The primary focus for Standards for CBRNE countermeasures has been CBRNE detection technology performance standards. In FY 2004 and early FY 2005, an interagency task force was formed to address the controversy over the effectiveness and use of lateral flow immunoassays for the detection of *Bacillus anthracis* (anthrax) by emergency responders. The accepted criteria for performance were published as well as testing and evaluation results of all participating commercially available hand-held immunoassays.

In addition, the program supported the evaluation of a five step method to pre-screen suspicious powders through an effort with Edgewood Chemical Biological Center (ECBC) and OSLGCP's Center for Domestic Preparedness (CDP). An effort was also initiated with CDP to develop a Bio-Protocol for first responders to use to guide their response to a suspicious powder incident. In the area of radiological and nuclear detection, four American National Standards Institute standards were developed to provide performance specifications for four different types of radiation detection equipment. To date, 63 different models of radiation detection equipment have been tested to the standards. The results of all of the radiation detector testing will be made available to the first responder community in March 2005.

In FY 2006, the Standards Program will continue to utilize interagency working groups to reevaluate requirements and prioritize needs for CBRNE countermeasures standards. The portfolio will focus on developing sampling protocols and guidelines and standardized sample triage methods for CBRNE countermeasures. In addition, the development of performance standards for two additional radiation detection technologies (spectroscopic portal monitors and active interrogation devices) will be completed. Finally, the program will evaluate the needs for standards for emerging CBRNE countermeasures technologies including CBRNE point detectors; CBRNE stand off detectors and urban surveillance technologies such as BioWatch, CBRNE facility monitors, and water distribution monitors.

Standards for Personal Protective Equipment for First Responders: In FY 2004 and 2005, the Standards Program supported the development of eight personal protective equipment standards including three National Institute for Occupation Safety and Health (NIOSH) respiratory protection standards, one National Fire Protection Association (NFPA) respiratory protection standard, and four NFPA protective clothing standards. To date, 52 separate models of respirators have been certified as compliant with the four DHS adopted standards addressing respiratory protection equipment. And, standards set by the S&T Directorate will be incorporated into the grant guidelines governing the type of equipment that can be purchased with OSLGCP's grant funds.

In FY 2006, the Standards Program will continue development of standards for current CBRNE personal protective equipment specifically focusing on completing the suite of respiratory protection equipment standards to include powered air purifying respirators, closed-circuit self contained breathing apparatus, supplied air respirators and combination respirators.

Standards for Urban Search and Rescue Robots (US&R): In FY 2004 and FY 2005, the Standards Program initiated the development of comprehensive standards related to the development, testing, and certification of effective robotic technologies for urban search and rescue (US&R). Several workshops have been held with the representatives from the FEMA US&R task forces to gather requirements for the standards. The US&R robotics standards will include evaluation of sensing, mobility, navigation, planning, integration, and operator interaction with search and rescue robot systems, as well as ensuring that the robots can meet operational requirements.

In FY 2006, the program will work to complete the development and adoption of a suite of standards to address US&R robot performance.

Standards to Support both the National Incident Management System (NIMS) and SAFECOM: In FY 2005, the Standards Program established a formal relationship with FEMA's National Incident Management Systems (NIMS) Integration Center (NIC) to clarify roles and responsibilities for standards development to support NIMS. In addition, the portfolio worked with the NIC to support a preliminary standards needs analysis for NIMS.

In FY 2006, the program will maintain our relationship with the NIC, prioritize standards development efforts and adopt currently available standards to support the NIC, and initiate efforts to develop high priority standards related to incident management. In a similar manner, the Standards Program will support the SAFECOM Program which has initiated efforts to develop standards to support and supplement interoperable communications standards.

Office of Interoperability and Compatibility

Non-interoperable and incompatible equipment and a lack of standardized procedures for their operation are issues that have plagued the public safety community for decades. To address these issues, the S&T Directorate's Office for Interoperability and Compatibility (OIC) will work with the NIC to coordinate the Federal response to the challenges of interoperability and compatibility. By coordinating and leveraging the vast range of interoperability programs and related efforts across DHS, the OIC will help the Department identify and promote best practices, minimize duplication in programs and spending, and coordinate relevant Federal activities.

The OIC will expand the Federal Interoperability Coordination Council (FICC) to include all aspects of interoperability relevant to homeland security**.** Members of the FICC include those agencies that provide grants to state and local agencies, such as DHS and the Department of Justice; those that need to interoperate with each other or with state and local agencies, such as DHS, DOJ, USDA, DOI, and DoD; and standards-making and regulatory organizations, such as the Federal Communications Commission and the National Institute for Standards and Technology.

The OIC is creating a series of new programs in collaboration with existing efforts to address the interoperability and compatibility issues related to the emergency response provider and

homeland security community. Initial programs include interoperability and compatibility issues related to:

- Communications (working with the Safety Wireless Communications and Interoperability [SAFECOM] Program;
- Equipment; and
- Training.

Achieving full interoperability and compatibility is truly a national endeavor. The Department of Homeland Security's Federal Emergency Management Agency (FEMA) and the Department of Justice's Community Oriented Policing Services (COPS) office have partnered to coordinate more than $230 million appropriated by Congress for grants specifically to address interoperability. Additionally, since 2001, FEMA has been the Federal lead for the President's Disaster Management initiative. This interagency effort, is a critical government-wide initiative that directly improves the ability of our nation's first responders to communicate and share information at all levels of government. The Disaster Management initiative provides one-stop access through the disasterhelp.gov portal for all Federal disaster management-related information, services, and planning and response tools. There are currently over 1,030 user groups in 50 states using this tool and it has been used to respond to over 40 real-world incidents, including Hurricane Isabel in September 2003 and the California wildfires. SAFECOM and OIC will continue to partner with the Disaster Management initiative in coordination of standards development and outreach to the first responder community. Also, in FY 2004, total State allocations for interoperable communications projects from OSLGCP's Homeland Security Grants Program funds totaled $762 million representing more than one-third of the total appropriated amount for the HSGP. Additionally, from UASI funds, total State allocations were $239 million, which also represents more than one-third of the total appropriated amount for the UASI program. Taken together, these allocations totaled $922 million and funded a total of 4,208 projects in FY 2004 alone. The next step is to ensure that these projects achieve their intended goals and deliver measurable improvements in interoperability.

Collaboration with Academia – Homeland Security Center of Excellence

To facilitate the involvement of the academic community in addressing scientific and technological issues related to first responders, the S&T Directorate has issued a BAA for a Center of Excellence for the Study of High Consequence Event Preparedness and Response. While our country's first responders have immense experience dealing with wildfires, hurricanes, tornadoes, floods and earthquakes, disasters on this scale intentionally caused by terrorists – especially those armed with chemical, biological, radiological, or nuclear weapons – are a relatively new threat. This new Center will perform research to prepare for high consequence events – with special emphasis on acts of terrorism. Studies will focus on the following areas: Preparedness, Prevention and Deterrence, Decision-Making, Effective Response Networks, and Modeling and Simulation. Its research will address the technical, systemic, behavioral and organizational challenges that such events pose. The Center will also engage in mission-oriented research to significantly enhance the capabilities of first responders. The Center will highlight innovative research and education that serve the goals of the NRP.

Interagency Collaboration

Leveraging the significant capabilities of other Federal Departments and agencies has enabled the Department of Homeland Security to make some significant improvements in emergency preparedness and response capabilities. The Department of Defense, Department of Energy, Department of Justice, Department of Health and Human Services, National Oceanic and Atmospheric Administration (NOAA), the Environmental Protection Agency (EPA), Nuclear Regulatory Commission (NRC) and National Aeronautics and Space Administration (NASA) and others continue to be valuable contributors to emergency responder capabilities. All of these organizations participated in the formulation of HSPD–5 and HSPD-8 and will play an important role in the implementation of these Directives.

The Interagency Modeling and Atmospheric Assessment Center (IMAAC) described above has significant interagency participation, including DOC, DoD, DOE, EPA, NRC, NOAA, and NASA. The IMAAC developed an MOU that establishes general operating principles and provides for the development of annexes which detail specific resource commitments. In addition to the MOU, the working group has produced an interim standard operating procedure, currently is reviewing the template for annexes, and is discussing other critical aspects of atmospheric hazard prediction that will improve the coordination of Federal assets.

The Science and Technology Directorate participates on the Federal and Interdepartmental Committee for Meteorological Services and Supporting Research (ICMSSR). We recently co-chaired an interagency Joint Action Group as part of this committee. A collaborative process was co-led by the Directorate and with the Army Research Office, with participation from DOE, DTRA, Dugway Proving Grounds, EPA, NASA, NOAA, and the NRC to focus on modeling of research needs in the area Atmospheric Transport and Dispersion (ATD). The Joint Action Group, as a subset of the ICMSSR, developed an Atmospheric Transport and Diffusion Research and Development Plan that describes the requirements to meet ATD user-community needs. The R&D Plan also recommends strategies to address those needs to achieve reliable ATD modeling capability.

The Science and Technology Directorate interfaces with other government agencies to facilitate the development of standards for the Department of Homeland Security. The Directorate's interactions with other agencies resulted in several voluntary consensus standards in concert with US industry and accredited Standards Development Organizations (SDOs), some of which have been discussed previously in this testimony.

- The Science and Technology Directorate collaborated with DOD, DOE, USDA, and DOC (National Institute of Standards and Technology) and developed standards for radiation.
- The Science and Technology Directorate collaborated with DOC/NIST, HHS/Centers for Disease Control, DOD, FDA, USDA, EPA and FBI resulting in the development of standards for detection of *Bacillus anthracis* (anthrax).
- The Science and Technology Directorate developed standards for personal protective equipment for emergency responders through collaborative interagency efforts with DOD, the DOC/NIST, and HHS/NIOSH.

- The Science and Technology Directorate developed standards for biometrics (facial photograph standards) by partnering with DOC/NIST, DOJ/FBI and Department of State.
- The Science and Technology Directorate participates on an OSTP/NSTC Subcommittee on Standards that includes DHS, NRS, EPA, DOE, HHS, Department of Labor and DoD. This Subcommittee on Standards developed Protective Action Guides to provide Federal guidance to emergency responders with respect to a dirty bomb or nuclear incident.

Achieving full interoperability and compatibility is truly a national endeavor. The Department of Homeland Security's Federal Emergency Management Agency (FEMA) and the Department of Justice's Community Oriented Policing Services (COPS) office have partnered to coordinate more than $230 million appropriated by Congress for grants specifically to address interoperability. Also, in FY 2004, total State expenditures for interoperable communications projects from OSLGCP's Homeland Security Grants Program funds totaled $761 million, representing more than one-third of the total appropriated amount for the HSGP. Additionally, from UASI funds, total State expenditures were $239 million, which also represents more than one-third of the total appropriated amount for the UASI program. Taken together, state expenditures to develop and/or enhance interoperable communications systems from OSLGCP's HSGP and UASI funds totaled $922 million and funded a total of 4,208 projects in FY 2004 alone. The newly formed OIC will serve as the umbrella program within the Federal government to help local, tribal, state, and Federal public safety agencies improve public safety response through more effective and efficient interoperable emergency response systems. OIC will extend the SAFECOM model and expand the Federal Interoperability Coordination Council (FICC) to include all aspects of interoperability relevant to homeland security**.** Members of the FICC include those agencies that provide grants to state and local agencies, such as DHS and the Department of Justice; those that need to interoperate with each other or with state and local agencies, such as DHS, DOJ, USDA, DOI, and DoD; and standards-making and regulatory organizations, such as the Federal Communications Commission and the National Institute for Standards and Technology.

Conclusion

Over the last year, the S&T Directorate has made significant progress both in meeting critical near term needs and in building a foundation for a strategic RDT&E program for emergency response. We have worked hard to ensure next generation capabilities are effectively integrated in the response community and value our close working relationship with FEMA, OSLGCP and the response community. With strong Executive and Congressional support, we have established ourselves as the leader within the Federal government for understanding homeland security research requirements and coordinating Federal research efforts, especially for chemical, biological, radiological, nuclear and explosive countermeasures; standards; and interoperability and compatibility. More importantly, we have been a catalyst for new university and industry efforts to address first responder needs.

We are confident that with your continuing support and the continuing collaboration and assistance of our many Federal partners, we will continue to work towards a world where lives and property are never lost because emergency response agencies lack the appropriate equipment, are unable to communicate or lack effective training and education technologies.